Application. No. 10/622,981
Amendment. dated 12/4/06
Reply to Office action of 9/5/06

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and

listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended). A microprocessor circuit,

comprising:

at least one control unit;

at least one memory for free programming with at least one

program having functions, said memory connected to said

control unit;

a register bank having registers, said register bank connected

to said control unit:

an auxiliary register comprising a number of further registers

corresponding to a number of said registers of said register

bank, each one of said further registers storing a single bit

number of bits, each of the bits being associated with one of

said registers of said register bank and indicating whether

valid data was written in a respective one of said registers

contains a value different from a logical "0", said auxiliary

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register connected to at least one of said control unit or

said register bank, and a stack for buffer-storing data of

said auxiliary register and, as a function of the associated

bit, of said registers of said register bank, said stack

connected to at least one of said control unit, said register

bank, or said auxiliary register.

Claim 2 (currently amended). The microprocessor circuit

according to claim 1, ~~wherein said auxiliary register has a~~

~~number of further registers corresponding to a number of said~~

~~registers of said register bank~~ including a second stack for

storing at least some data in said register bank, said second

stack connected to said control unit and inaccessible by the

program.

Claim 3 (currently amended). The microprocessor circuit

according to ~~claim 2~~ claim 1, wherein: ~~each of said further~~

~~registers store single bit~~

said register bank has first and second areas with first and

second registers;

said first registers storing data of a called function; said

second registers storing data of both a called function and

data of a calling function; and at least said first registers

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<u>are associated with a bit stored in a further register of said</u>

<u>auxiliary register.</u>

Claim 4 (currently amended). <u>A</u> ~~The~~ microprocessor circuit
~~according to claim 1, wherein said auxiliary register has~~
~~only~~<u>, comprising:</u>

<u>at least one control unit;</u>

<u>at least one memory for free programming with at least one</u>
<u>program having functions, said memory connected to said</u>
<u>control unit;</u>

<u>a register bank having registers, said register bank connected</u>
<u>to said control unit;</u>

<u>an auxiliary register comprising</u> one further register for
storing a bit sequence corresponding to a number of said
registers of said register bank<u>, each one of said further</u>
<u>registers storing a single bit, each of the bits being</u>
<u>associated with one of said registers of said register bank</u>
<u>and indicating whether a valid data was written in respective</u>
<u>one of said registers, said auxiliary register connected to at</u>
<u>least one of said control unit or said register bank, and a</u>
<u>stack for buffer-storing data of said auxiliary register and,</u>

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<u>as a function of the associated bit, of said registers of said</u>

<u>register bank, said stack connected to at least one of said</u>

<u>control unit, said register bank, or said auxiliary register</u>.

Claim 5 (original). The microprocessor circuit according to

claim 4, wherein said auxiliary register is at least one of

said registers of said register bank.

Claim 6 (currently amended). The microprocessor circuit

according to ~~claim 1~~ <u>claim 4</u>, further comprising a second

stack for storing at least some data in said register bank,

said second stack being accessible only to an operating system

of said control unit.

Claim 7 (currently amended). The microprocessor circuit

according to ~~claim 1~~ <u>claim 4</u>, further comprising a second

stack for storing at least some data in said register bank,

said second stack inaccessible by a programmer.

Claim 8 (currently amended). The microprocessor circuit

according to ~~claim 1~~ <u>claim 4</u>, further comprising a second

stack for storing at least some data in said register bank,

said second stack connected to said control unit and

inaccessible by the program.

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Claim 9 (currently amended).   The microprocessor circuit

according to ~~claim 1~~ claim 4, wherein:

said register bank has first and second areas with first and

second registers;

said first registers storing data of a called function; said

second registers storing data of both a called function and

data of a calling function; and at least said first registers

are associated with a bit of said bit sequence stored in said

auxiliary register.

Claim 10 (currently amended).   The microprocessor circuit

according to ~~claim 1~~ claim 4, wherein:

said register bank has first and second areas with first and

second registers;

said first registers storing data of a called function;

said second registers storing data of both a called function

and data of a calling function; and

at least said first registers are associated with a bit of

said bit sequence stored in said auxiliary register.

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Claim 11 (currently amended). The microprocessor circuit
according to ~~claim 9~~ claim 4, wherein said first area of said
register bank is divided into a plurality of sub-areas
respectively available to one of the functions of the program.

Claim 12 (currently amended). A method for operating a
microprocessor circuit, which comprises the steps of:

providing a circuit with:

   at least one control unit;

   at least one memory for free programming with at least
   one program having functions;

   a stack for buffer-storing data;

   a register bank having registers; and

   an auxiliary register:

setting all of the bits of the auxiliary register to a ~~logical~~
~~"0"~~ first value when the circuit is initialized;

storing bits in the auxiliary register, each of the bits being

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associated with one of the registers and indicating whether a

respective one of the registers contains a ~~value~~ valid datum

different from ~~a logical "0"~~ the first value;

setting a bit of the auxiliary register associated with a

respective one of the registers to a second value different

from the ~~logical"0"~~ first value when a datum is written to the

associated register of the register bank; ~~and~~

storing data being stored in the auxiliary-register and the

registers of the register bank in the stack, selecting

registers of the register bank being stored as a function of

their associated bits, or storing data being stored in the

stack in the auxiliary register and in the registers of the

register bank, and selecting the registers of the register

bank storing data as a function of the associated bits;

the method further comprises, when a datum from one of the

registers of the register bank whose associated bit of the

auxiliary register has the first value is read, returning a

predefined datum.

Claim 13 (currently amended). The method according to claim

12, ~~which further comprises permitting a read of a datum from~~

~~one of the registers of the register bank only if the~~

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~~associated bit of the auxiliary register has the value~~

~~different from the logical "0"~~ <u>wherein the first value</u>

<u>corresponds to a logical "0"</u>.

Claim 14 (currently amended). The method according to claim

12, ~~which further comprises, when a datum from one of the~~

~~registers of the register bank whose associated bit of the~~

~~auxiliary register has the logical "0" value is read,~~

~~returning the datum "0"~~ <u>wherein the predefined datum</u>

<u>corresponds to the datum "0"</u>.

Claim 15 (currently amended). The method according to claim

13, which further comprises, when a datum from one of the

registers of the register bank whose associated bit of the

auxiliary register has the ~~logical "0"~~ <u>first</u> value ~~is~~ read,

returning the datum "0".

Claim 16 (currently amended). The method according to claim

12, which further comprises:

providing the circuit with a second stack for storing at least

some data in the register bank and making the second stack

inaccessible by a programmer; and

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if the circuit changes from a first function to a second

function, successively storing the data associated with the

first function in the registers of the register bank and the

~~bit sequence of~~ bits stored in the auxiliary register in one

of the stack and the second stack.

Claim 17 (currently amended). The method according to claim

16, which further comprises setting the bits of the auxiliary

register to the ~~logical "0"~~ first value after storing the data

and the ~~bit sequence of~~ bits stored in the auxiliary register

in one of the stacks.

Claim 18 (currently amended). The method according to claim

12, wherein a register of the register bank is only stored on

the stack if the associated bit of the auxiliary register has

a value different from the ~~logical "0"~~ first value.

Claim 19 (previously presented). The method according to

claim 18, wherein the auxiliary register is stored as the last

value on the stack.

Claims 20 and 21 (canceled).

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